



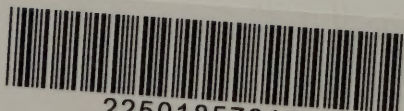
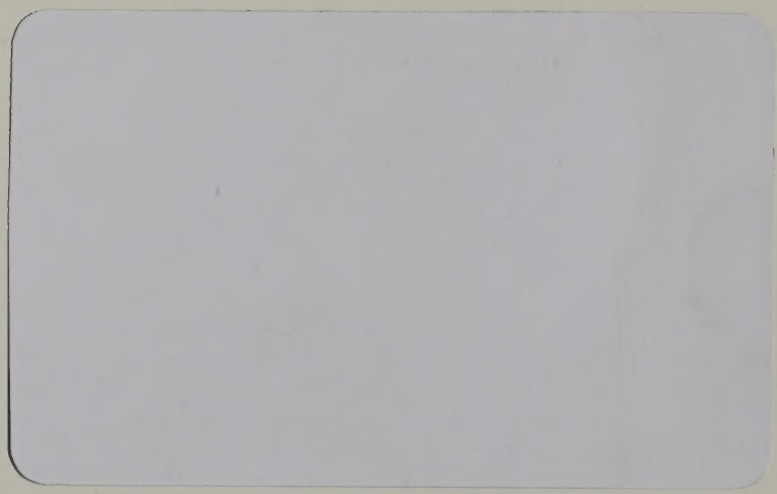
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Internal Audit and Evaluation

Vérification interne et Évaluation

REVIEW OF THE
PROMOTION PROCESS
FOR RESEARCH SCIENTISTS

APPENDICES



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Wellcome Centre for Medical Science

**REVIEW OF THE
PROMOTION PROCESS
FOR RESEARCH SCIENTISTS**

APPENDICES

**Internal Audit and Evaluation Branch
February 1993**

SEVEN

ENTRIES

APPENDIX A

Terms of Reference

Introduction

The need for a comprehensive review of the promotion process for research scientists was specified by the Assistant Deputy Minister of Science and the Director General of Personnel. A number of Regional Directors General also expressed some concerns in this regard and an interest in being involved in this review.

Background

Positions in the Research Scientist (RS) series are different from the majority of Federal Public Service appointments in that they are merit-based and merit-based positions. The level of a position is based on the scientific accomplishments of the incumbent and changes in the position level occur as a result of the incumbent performing at the next classification level.

Current Board policy on this process was established by an Interdepartmental Committee and accepts a merit system whereby the percentage of successful candidates who are promoted can have a given level is limited to 30% for the RS-10 level, 20% at the RS-11 level and 10% at the RS-12 level. CPO has a national Departmental Science Committee for Research Scientists and regional committees that are involved in the promotion process for research scientists. Candidates for promotion are nominated by the regional committees.

Some concerns have been raised as to the criteria and processes used in the promotion process for research scientists in the Department. The perception is that the criteria used for promotion appear to be based more on research scientific excellence rather than production of science to the department. That selection process to be recognized and rewarded through the promotion process for research scientists to ensure that their peers rather than the influence of the research to an existing science-oriented culture.

REVIEW OF PROMOTION PROCESS FOR RESEARCH SCIENTISTS

Proposed Terms of Reference

Introduction

The need for a comprehensive review of the promotion process for research scientists was identified by the Assistant Deputy Minister of Science and the Director General of Personnel. A number of Regional Directors General also expressed some concerns with this process and an interest in being involved in this review.

Background

Promotions in the Research Scientist (SE-RES) are different from the majority of Federal Public Service appointments in that they are incumbent-oriented rather than position-oriented. The level of a position is based on the scientific accomplishments of the incumbent and changes to the position level occur as a result of the incumbent performing at the next classification level.

Treasury Board policy on this process uses criteria established by an Interdepartmental committee and adopts a quota system whereby the percentage of research scientists that a department can have at a given level is limited to 20% for the SE-RES-03, 25% at the SE-RES-04 level and 5% at the SE-RES-05 level. DFO has a national Departmental Review Committee for Research Scientists and regional committees that are involved in the promotion process for research scientists. Candidates for promotion compete annually for the limited vacancies.

Some concerns have been raised as to the criteria and processes used in the promotion process for research scientists in the Department. The perception is that the criteria used for promotions appear to be biased more towards scientific excellence rather than provision of service to the clients. Thus, scientists seem to be recognized and rewarded through the promotion process for their contribution to research aimed at their peers rather than the relevance of the research in an evolving service-oriented culture.

Review of Promotion Process for Research Scientists

The need for this review is also supported by the Audit Report on the Physical and Chemical Sciences Directorate which contained a recommendation for changes to the performance appraisal process for research scientists. The findings indicate that the current criteria used to evaluate performance may at times be incompatible with the service to the client philosophy. Since this issue was broader than the Physical and Chemical Sciences Directorate, it was determined that it would be broadened to a comprehensive review of the promotion process for research scientists in the entire Science Sector (memorandum from R. Bergeron to A. Silverman, May 19, 1992).

Review Issues

The following issues have been identified for review:

1. The promotion process for research scientists in DFO.

- * what criteria are used for selection and evaluation of candidates for promotion?
- * do the criteria need to be changed?
- * are there direct linkages between the criteria and established annual Departmental objectives and priorities?
- * are the criteria related only to productivity and contribution of a scientific nature?
- * are good communication skills and service to the client orientation reflected in the criteria?
- * are departmental or federal standards applied?
- * who selects candidates?
- * who makes the final decision on successful candidates?
- * are DFO program clients considered or involved in the promotion process?
- * is there a peer group review in the selection and rating of candidates?

2. The promotion process for other professional groups, particularly biologists (BI), engineers (ENG) and commerce officers (CO) within the Department.

- * what processes and criteria are used for promotions in other professional groups?
- * are there any other professional groups that need to be examined?

Review of Promotion Process for Research Scientists

- 3. Promotion processes used in other science-based federal Departments, other jurisdictions (e.g. provincial government), the private sector and internationally.**
 - * how do DFO criteria and processes compare with other federal and provincial science-based Departments and the private sector?
 - * how do the rate of promotions and appeals compare?
 - * how is the promotion process conducted in other G-7 countries and Australia and New Zealand?
- 4. Equity in promotional opportunities within the Science Sector.**
 - * is the promotion process equitable?
 - * are the promotional opportunities equitably distributed in the various sections of the Science Sector?
 - * are the processes and criteria consistently applied?
 - * are the rates of promotions and appeals comparable?
 - * are promotional opportunities fairly available to employment equity groups?
- 5. Perception of DFO's research scientists and other client groups.**
 - * is the promotion process perceived to be equitable by research scientists, clients, management and bargaining agents?
 - * is the role of research scientists in DFO clearly defined and understood by themselves, clients and other DFO managers?
 - * are the processes and criteria used for promotions communicated to the research scientists?
 - * are they perceived as being fair?
 - * are they perceived as equitably assessing all relevant forms of scientific productivity?
 - * is client involvement necessary or appropriate in this process?
- 6. Linkages between promotion process and previous Science Evaluations.**
 - * is the relevance of the research to DFO objectives appropriately recognized and rewarded?

Review of Promotion Process for Research Scientists

- * are there any linkages between findings of program evaluations and subsequent promotion decisions?
- 7. Examine the possibility of making appropriate recommendations to Treasury Board Secretariat.**

Methodology

The approach to the review will be as follows:

- * Document the promotion process for research scientists in DFO through interviews with Personnel and the Department Review Committee for Research Scientists;
- * Analyze demographics on DFO's research scientist population and rate of promotions by region and sections within Science Sector;
- * Review a representative sample of historical personnel files of both research scientists who have been promoted and those not promoted to assess the application of established criteria;
- * Review minutes or any formal documentation on the deliberations of the Department Review Committee for Research Scientists to assess application of established criteria;
- * Conduct research into practices of other federal departments, other levels of government, the private sector and internationally;
- * Consult with Treasury Board Secretariat and Interdepartmental Committee on Research Scientists regarding the policy governing this process and classification standards for research scientists;
- * Collaborate with an external, leading scientific expert in an advisory capacity to lend credibility to the review;

Review of Promotion Process for Research Scientists

- * Conduct interviews with ADM, Science; DG, Personnel; Regional Directors General; Headquarters Directors General; Regional Directors of Science; chairman of the RES promotion board; and, Regional Directors of Fisheries & Habitat Management.
- * Consult with a representative sample of research scientists, biologists and technicians from all disciplines, regions and levels to gather perceptual, qualitative data;
- * Consult with selected internal clients (e.g. fisheries managers) as well as external clients;
- * Consult with heads of pertinent Associations, Societies or other Science interest groups;

Timeframe

October 5-9

- * Initial meetings/telephone calls with ADM, Science; DG, Personnel; Chairman, RES Promotion Board; RDG, Pacific; RDG, Quebec and other interested parties to discuss proposed terms of reference;
- * Gather quantitative information on demographics;
- * Initiate research other groups and other departments/jurisdictions/private sectors' promotion processes and criteria;
- * Obtain promotion files and documentation from Departmental Review Committee for Research Scientists;

October 13-16

- * Revise and finalize terms of reference;
- * Schedule meetings with Regional Directors of Science, if necessary;
- * Schedule group interviews with selected research scientists and client groups;
- * Develop interview guide for various groups to be consulted;

Review of Promotion Process for Research Scientists

October 19-November 13

- * Travel - Vancouver, Nanaimo, Sydney, Winnipeg, Mont-Joli, Quebec City, Moncton, Halifax, St. John's;
- * Conduct personal and group interviews with RDGs, Regional Directors of Science and Fisheries and Habitat Management, Fisheries Managers, Research Scientists, Biologists and Technicians, external clients;
- * Collect pertinent regional data;
- * Analyze regional personnel files;

November 16-20

- * Analyze information collected;
- * Produce first draft of findings;
- * Circulate first draft of report for comments;

November 23-30

- * Finalize report;
- * Produce Executive Summary for DM;

Resources

The review will be conducted primarily by Meena Trotman with assistance from a junior analyst from Consulting and Audit Canada. Gary Boyd of the Science Sector as well as Nelson Strang, IAE and Celine Cheah, OCG will provide advice as required.

Review of Promotion Process for Research Scientists

The estimated expenditures are as follows :

Travel/Accommodation :	\$ 5 000
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In-house salaries :

Evaluation Manager (30 days)	\$ 8 250
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Consultant fees :

Expert Advisor (5 days)	\$ 2 500
Junior Analyst - CAC (20 days)	\$10 000

Total	\$ 25 750
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APPENDIX B

Interview Guides

GUIDE FOR INTERVIEWS WITH RESEARCH SCIENTISTS

I.D. _____

Sex _____

Category _____

Year Appointed _____

Region _____

At Max for Level? _____

Age (at 1 Nov 92) _____

Years/Months at Max _____

Preliminaries (5 min.)

Provide overview of study.

Let person talk about who they are and what they do.

General (5 min.)

1. Can you talk about the link between your work and the Department's mission and objectives (priorities).

Probe : Annual links to department's objectives & priorities.

Rationale : Warm up - links to preliminaries and demonstrates level of awareness of the Department's mission and objectives.

Review of Promotion Process for Research Scientists

2. Is the role of research scientists clearly defined and understood?

Yes _____ No _____ Don't Know _____ No Response _____

Rationale : To probe for their level of understanding of where they fit in the "big picture".

3. Who would you regard as being the immediate users of your work? How do you communicate with them? Who are the ultimate beneficiaries of your work?

Rationale : To establish their awareness of who they regard as their clients.

Review of Promotion Process for Research Scientists

Current Promotion Process & Criteria (10 min.)

4. What is your understanding of the promotion process in your Region?

Probe : Sources of information about the process (how do you know about it?)

Rationale : To establish their understanding of the mechanics of the promotion process.

To determine whether there are communication difficulties in disseminating information on the process.

5. Do you have a clear understanding of the criteria which are applied in the promotion process?

Yes _____ No _____ Don't Know _____ No Response _____

Rationale : To establish their understanding of the criteria.

Review of Promotion Process for Research Scientists

6. Do you feel that the criteria used in the promotion process adequately assess all the relevant forms of scientific productivity?

Yes _____ No _____ Don't Know _____ No Response _____

Rationale : To determine scientists' perspective on whether they are being assessed on what they do.

7. Would you say that the criteria reflect an appropriate balance between scientific excellence and service to the clients?

Yes _____ No _____ Don't Know _____ No Response _____

Rationale : To establish link between assessments and the department's mission and objectives.

Review of Promotion Process for Research Scientists

8. In your opinion, what constitutes a good research scientist?

Rationale : To obtain the scientists' perspective on the kind of achievements that should be recognized and rewarded.

9. Are those characteristics reflected in the criteria?

Yes _____ No _____ Don't Know _____ No Response _____

Rationale : To determine justification for changes to criteria.

10. How does this apply to yourself - Do the criteria reflect what you actually do?

Yes _____ No _____ Don't Know _____ No Response _____

Rationale : To determine whether they perceive that they are being assessed on what they do.

11. What is the link between your workplans, your assessment and promotions?

Rationale : To establish link between assessments and promotions and the department's mission and objectives as reflected in individual workplans.

12. Do you feel that the process is fair?

Yes _____ No _____ Don't Know _____ No Response _____

Review of Promotion Process for Research Scientists

13. Are the criteria fairly applied?

Yes _____ No _____ Don't Know _____ No Response _____

Rationale : To determine perception of criteria.

Review of Promotion Process for Research Scientists

What should be (10 min.)

14. Should the criteria be changed? If so, in what way?

Yes _____ No _____ Don't Know _____ No Response _____

Probe : service to the client;
 effective communications;
 informal advisory services to other scientists and clients;
 impact of resource constraints on productivity;
 supervisory obligations;
 recognition for seeking and obtaining non A-base resources;
 greater emphasis on scientific excellence.

15. Do you think the promotion process should be changed? If so, in what way?

Yes _____ No _____ Don't Know _____ No Response _____

Review of Promotion Process for Research Scientists

16. In your opinion, should there be client involvement in the management of the promotion process? (e.g. RDG chairing the Departmental Review Committee?)

Yes _____ No _____ Don't Know _____ No Response _____

17. Are there any other items or issues not discussed that you would like to raise?

Documents, data, reports referred to during Interview

GUIDE FOR INTERVIEWS WITH REGIONAL DIRECTORS GENERAL

Preliminaries (5 min.)

Provide overview of study.

General (25 min.)

1. Is the role of research scientists clearly defined and understood?

Yes. _____ No. _____ Don't Know. _____ No Response. _____

2. Do you feel that the work done by research scientists in your region is relevant to the Department's mission and objectives? How often do you assess the relationship?

Yes. _____ No. _____ Don't Know. _____ No Response. _____

Review of Promotion Process for Research Scientists

3. Who are their clients?

Rationale : To establish managerial perception of the research scientists' clients.

Current Promotion Process & Criteria (20 min.)

4. What is the promotion process in your region?

5. Do the research scientists themselves understand the process and criteria?

Yes. _____ No. _____ Don't Know. _____ No Response. _____

Rationale : To identify any communication difficulties that may exist.

Review of Promotion Process for Research Scientists

6. Do you feel that the process is fair and accessible to those concerned?

Yes. _____ No. _____ Don't Know. _____ No Response. _____

Rationale : To determine managerial perception of transparency of process.

7. In your opinion, what constitutes a good research scientist?

Rationale : To obtain the RDG's perspective on the kind of achievements that should be recognized and rewarded.

Review of Promotion Process for Research Scientists

8. Are those characteristics reflected in the criteria?

Yes. _____ No. _____ Don't Know. _____ No Response. _____

Rationale : To determine justification for changes to criteria.

9. Do you feel that the criteria used in the promotion process adequately assess all the relevant forms of scientific productivity?

Yes. _____ No. _____ Don't Know. _____ No Response. _____

Rationale : To determine managerial perspective on whether research scientists are being assessed on what they do.

Review of Promotion Process for Research Scientists

10. Would you say that the criteria reflect an appropriate balance between scientific excellence and service to the clients?

Yes. _____ No. _____ Don't Know. _____ No Response. _____

Rationale : To establish link between assessments and the department's mission and objectives.

11. Are the criteria fairly applied?

Yes. _____ No. _____ Don't Know. _____ No Response. _____

Review of Promotion Process for Research Scientists

12. Is there equitable access to promotional opportunities across the various disciplines in the Science Sector (e.g. Ocean Sciences vs. Biological Sciences).?

Yes. _____ No. _____ Don't Know. _____ No Response. _____

Rationale : To determine managerial perception of any differences in promotional opportunities across the Science Sector.

Review of Promotion Process for Research Scientists

What should be (10 min.)

Rationale for following 3 questions : To determine whether there are realistic alternatives to the present process and criteria.

13. Should the criteria be changed? If so, in what way?

Yes. _____ No. _____ Don't Know. _____ No Response. _____

Probe : service to the client;
 communication skills;
 informal advisory services to other scientists and clients;
 impact of resource constraints on productivity;
 supervisory obligations;
 recognition for seeking and obtaining non A-base resources;
 greater emphasis on scientific excellence

Review of Promotion Process for Research Scientists

14. Do you think the promotion process should be changed? If so, in what way?

Yes. _____ No. _____ Don't Know. _____ No Response. _____

15. In your opinion, should there be client involvement in the management of the promotion process? (e.g. RDG chairing the Departmental Review Committee?)

Yes. _____ No. _____ Don't Know. _____ No Response. _____

16. Are there any other items or issues not discussed that you would like to raise?

Reports, data, documents referred to during interview.

Review of Promotion Process for Research Scientists

GUIDE FOR INTERVIEWS WITH REGIONAL DIRECTORS OF SCIENCE

Total Duration of Personal Interview - 60 min.

Preliminaries (5 min.)

Provide overview of study.

General (25 min.)

1. Is the role of research scientists clearly defined and understood?

Yes. _____ No. _____ Don't Know. _____ No Response. _____

Rationale : To determine managerial perception of where research scientists fit in the "big picture".

2. Do you feel that the work done by research scientists in your region is relevant to the Department's mission and objectives? How often do you assess the relationship?

Yes. _____ No. _____ Don't Know. _____ No Response. _____

Rationale : To determine managerial perception of linkages between activities of the research scientists and the Departmental objectives and priorities.

Review of Promotion Process for Research Scientists

3. Who are their clients?

Rationale : To establish managerial perception of the research scientists' clients.

Current Promotion Process & Criteria (20 min.)

4. What is the promotion process in your region? Have you established a regional committee similar to the Departmental Review Committee? Are peer research scientists (peer professionals for other groups) involved in the selection and rating of candidates?

Review of Promotion Process for Research Scientists

5. Do the research scientists themselves understand the process and criteria?

Yes. _____ No. _____ Don't Know. _____ No Response. _____

Rationale : To identify any communication difficulties that may exist.

6. Do you feel that the process is fair and accessible to those concerned?

Yes. _____ No. _____ Don't Know. _____ No Response. _____

Review of Promotion Process for Research Scientists

7. In your opinion, what constitutes a good research scientist?

Rationale : To obtain the RD's perspective on the kind of achievements that should be recognized and rewarded.

8. Are those characteristics reflected in the criteria?

Yes. _____ No. _____ Don't Know. _____ No Response. _____

Rationale : To determine justification for changes to criteria.

Review of Promotion Process for Research Scientists

9. Do you feel that the criteria used in the promotion process adequately assess all the relevant forms of scientific productivity?

Yes. _____ No. _____ Don't Know. _____ No Response. _____

Rationale : To determine managerial perspective on whether research scientists are being assessed on what they do.

10. Would you say that the criteria reflect an appropriate balance between scientific excellence and service to the clients?

Yes. _____ No. _____ Don't Know. _____ No Response. _____

Rationale : To establish link between assessments and the department's mission and objectives.

Review of Promotion Process for Research Scientists

11. Are the criteria fairly applied?

Yes. _____ No. _____ Don't Know. _____ No Response. _____

12. Is there equitable access to promotional opportunities across the various disciplines in the Science Sector (e.g. Ocean Sciences vs. Biological Sciences).?

Yes. _____ No. _____ Don't Know. _____ No Response. _____

Rationale : To determine managerial perception of any differences in promotional opportunities across the Science Sector.

Review of Promotion Process for Research Scientists

What should be (10 min.)

13. Should the criteria be changed? If so, in what way?

Yes. _____ No. _____ Don't Know. _____ No Response. _____

Probe : service to the client;
 communication skills;
 informal advisory services to other scientists and clients;
 impact of resource constraints on productivity;
 supervisory obligations;
 recognition for seeking and obtaining non A-base resources;
 greater emphasis on scientific excellence

14. Do you think the promotion process should be changed? If so, in what way?

Yes. _____ No. _____ Don't Know. _____ No Response. _____

Review of Promotion Process for Research Scientists

15. In your opinion, should there be client involvement in the management of the promotion process? (e.g. RDG chairing the Departmental Review Committee?)

Yes. _____ No. _____ Don't Know. _____ No Response. _____

16. Are you aware of approaches related to the promotion process in other organizations that may be appropriate to this Department?

Rationale : To gather information from the Regional Directors' broader perspective of approaches used elsewhere.

17. Are there any other items or issues not discussed that you would like to raise?

Reports, documents and data referred to during interview.

Review of Promotion Process for Research Scientists

GUIDE FOR INTERVIEWS WITH REGIONAL DIRECTORS OF FISHERIES & HABITAT MANAGEMENT AND INSPECTION

Total Duration of Personal Interview - 30 min.

Preliminaries (5 min.)

Provide overview of study.

General (25 min.)

1. How does the research scientists' work relate to what you do?

2. Would you consider yourself a client of research scientists?

Yes. _____ No. _____ Don't Know. _____ No Response. _____

Review of Promotion Process for Research Scientists

3. Are you satisfied with the level of service that you receive from the research scientists (timely and relevant)?

Yes. _____ No. _____ Don't Know. _____ No Response. _____

Rationale : To determine client satisfaction with the contribution of research scientists.

4. Do you consider that DFO research scientists help accomplish the Department's mission and objectives?

Yes. _____ No. _____ Don't Know. _____ No Response. _____

Rationale : To determine perception of relevance of research.

Review of Promotion Process for Research Scientists

5. In your opinion, what constitutes a good research scientist?

Rationale : To obtain the RD's perspective on the kind of achievements that should be recognized and rewarded.

6. (Establish awareness of the criteria) Are those characteristics reflected in the criteria used in the promotion process?

Yes. _____ No. _____ Don't Know. _____ No Response. _____

Rationale : To determine justification for changes to criteria.

Review of Promotion Process for Research Scientists

7. Do you feel that the criteria adequately assess all the relevant forms of scientific productivity?

Yes. _____ No. _____ Don't Know. _____ No Response. _____

Rationale : To determine client perception of whether research scientists are being assessed on what they do.

8. Would you say that the criteria reflect an appropriate balance between scientific excellence and provision of service to clients?

Yes. _____ No. _____ Don't Know. _____ No Response. _____

Rationale : To determine client perception of linkages between assessments and service to the clients.

Review of Promotion Process for Research Scientists

9. Is there equitable access to promotional opportunities across the various disciplines in the Science Sector (e.g. RES vs BI, PC, EG)?

Yes. _____ No. _____ Don't Know. _____ No Response. _____

What should be (10 min.)

Rationale for the following 2 questions : To obtain recommendations from the clients.

10. Would you recommend any changes to the promotional process or criteria for research scientists?

Yes. _____ No. _____ Don't Know. _____ No Response. _____

11. In your opinion, should there be client involvement in the management of the promotion process?

Yes. _____ No. _____ Don't Know. _____ No Response. _____

Review of Promotion Process for Research Scientists

12. Are you aware of approaches related to the promotion process in other organizations that may be appropriate to this Department?

Rationale : To gather information from the Regional Directors' broader perspective of approaches used elsewhere.

13. Are there any other items or issues not discussed that you would like to raise?

Reports, data, documents referred to during the interview.

APPENDIX C

Statistical Supplement: Responses to Interview Questions

Q 2

Is the role of Research Scientists clearly defined and understood?

BY LEVEL

LEVEL	YES		NO		D. KNOW		NO RESP		TOTAL	
	#	%	#	%	#	%	#	%	#	%
RES-1	3	38	5	63	0	0	0	0	8	11
RES-2	5	18	23	82	0	0	0	0	28	37
RES-3	2	13	11	73	2	13	0	0	15	20
RES-4	7	44	9	56	0	0	0	0	16	21
RES-5	4	50	4	50	0	0	0	0	8	11
TOTAL	21	28	52	69	2	3	0	0	75	100

BY REGION

REGION	YES		NO		D. KNOW		NO RESP		TOTAL	
	#	%	#	%	#	%	#	%	#	%
PACIFIC	3	15	16	80	1	5	0	0	20	27
C & A	2	20	7	70	1	10	0	0	10	13
QUÉBEC	1	9	10	91	0	0	0	0	11	15
GULF	3	43	4	57	0	0	0	0	7	9
SCOTIA FUNDY	9	43	12	57	0	0	0	0	21	28
NFLD	3	50	3	50	0	0	0	0	6	8
TOTAL	21	28	52	69	2	3	0	0	75	100

Q 5

Do you have a clear understanding of the criteria which are applied in the promotion process?

BY LEVEL

LEVEL	YES		NO		D. KNOW		NO RESP		TOTAL	
	#	%	#	%	#	%	#	%	#	%
RES-1	7	88	1	12	0	0	0	0	8	11
RES-2	20	77	6	21	2	7	0	0	28	37
RES-3	11	73	3	20	1	7	0	0	15	20
RES-4	12	75	4	25	0	0	0	0	16	21
RES-5	8	100	0	0	0	0	0	0	8	11
TOTAL	58	77	14	19	3	4	0	0	75	100

BY REGION

REGION	YES		NO		D. KNOW		NO RESP		TOTAL	
	#	%	#	%	#	%	#	%	#	%
PACIFIC	14	70	4	20	2	10	0	0	20	27
C & A	10	100	0	0	0	0	0	0	10	13
QUÉBEC	11	100	0	0	0	0	0	0	11	15
GULF	2	29	5	71	0	0	0	0	7	9
SCOTIA FUNDY	15	71	5	24	1	5	0	0	21	28
NFLD	6	100	0	0	0	0	0	0	6	8
TOTAL	58	77	14	19	3	4	0	0	75	100

Do you feel that the criteria used in the promotion process adequately assess all the relevant forms of scientific productivity?

BY LEVEL

LEVEL	YES		NO		D. KNOW		NO RESP		TOTAL	
	#	%	#	%	#	%	#	%	#	%
RES-1	4	50	3	38	1	13	0	0	8	11
RES-2	18	64	9	32	1	4	0	0	28	37
RES-3	12	80	3	20	0	0	0	0	15	20
RES-4	8	50	7	44	1	6	0	0	16	21
RES-5	7	88	1	12	0	0	0	0	8	11
TOTAL	49	65	23	31	3	4	0	0	75	100

BY REGION

REGION	YES		NO		D. KNOW		NO RESP		TOTAL	
	#	%	#	%	#	%	#	%	#	%
PACIFIC	12	60	6	30	2	10	0	0	20	27
C & A	6	60	4	40	0	0	0	0	10	13
QUÉBEC	7	64	4	36	0	0	0	0	11	15
GULF	4	57	3	43	0	0	0	0	7	9
SCOTIA FUNDY	15	71	5	24	1	5	0	0	21	28
NFLD	5	83	1	17	0	0	0	0	6	8
TOTAL	49	65	23	31	3	4	0	0	75	100

Would you say that the criteria reflect an appropriate balance between scientific excellence and service to the clients?

BY LEVEL

LEVEL	YES		NO		D. KNOW		NO RESP		TOTAL	
	#	%	#	%	#	%	#	%	#	%
RES-1	4	50	3	38	1	13	0	0	8	11
RES-2	7	25	20	71	1	4	0	0	28	37
RES-3	2	13	10	66	3	20	0	0	15	20
RES-4	7	44	7	44	2	13	0	0	16	21
RES-5	4	50	4	50	0	0	0	0	8	11
TOTAL	24	32	44	59	7	9	0	0	75	100

BY REGION

REGION	YES		NO		D. KNOW		NO RESP		TOTAL	
	#	%	#	%	#	%	#	%	#	%
PACIFIC	5	25	13	65	2	10	0	0	20	27
C & A	4	40	5	50	1	10	0	0	10	13
QUÉBEC	4	36	6	54	1	10	0	0	11	15
GULF	1	14	6	86	0	0	0	0	7	9
SCOTIA FUNDY	8	38	10	48	3	14	0	0	21	28
NFLD	2	33	4	67	0	0	0	0	6	8
TOTAL	24	32	44	59	7	9	0	0	75	100

Are the characteristics you consider make up a good research scientist reflected in the criteria?

BY LEVEL

LEVEL	YES		NO		D. KNOW		NO RESP		TOTAL	
	#	%	#	%	#	%	#	%	#	%
RES-1	5	63	1	13	0	0	2	25	8	11
RES-2	12	43	12	43	2	7	2	7	28	37
RES-3	6	40	7	47	2	13	0	0	15	20
RES-4	8	50	7	44	1	6	0	0	16	21
RES-5	5	63	3	38	0	0	0	0	8	11
TOTAL	36	48	30	40	5	7	4	5	75	100

BY REGION

REGION	YES		NO		D. KNOW		NO RESP		TOTAL	
	#	%	#	%	#	%	#	%	#	%
PACIFIC	11	55	7	35	1	15	1	5	20	27
C & A	4	40	6	60	0	0	0	0	10	13
QUÉBEC	4	36	3	27	1	9	3	27	11	15
GULF	4	57	3	43	0	0	0	0	7	9
SCOTIA FUNDY	10	48	8	38	3	14	0	0	21	28
NFLD	3	50	3	50	0	0	0	0	6	8
TOTAL	36	48	30	40	5	7	4	5	75	100

Do the criteria reflect what you actually do?

BY LEVEL

LEVEL	YES		NO		D. KNOW		NO RESP		TOTAL	
	#	%	#	%	#	%	#	%	#	%
RES-1	1	13	5	62	1	13	1	13	8	11
RES-2	11	39	13	46	1	4	3	11	28	37
RES-3	7	47	8	53	0	0	0	0	15	20
RES-4	11	69	5	31	0	0	0	0	16	21
RES-5	5	63	2	25	1	12	0	0	8	11
TOTAL	35	47	33	44	3	4	4	5	75	100

BY REGION

REGION	YES		NO		D. KNOW		NO RESP		TOTAL	
	#	%	#	%	#	%	#	%	#	%
PACIFIC	10	50	9	45	0	0	1	5	20	27
C & A	3	30	5	50	1	10	1	10	10	13
QUÉBEC	3	27	6	54	0	0	2	18	11	15
GULF	3	43	3	43	1	14	0	0	7	9
SCOTIA FUNDY	12	57	8	38	1	5	0	0	21	28
NFLD	4	67	2	33	0	0	0	0	6	8
TOTAL	35	47	33	44	3	4	4	5	75	100

Q 12

Do you feel the process is fair?

BY LEVEL

LEVEL	YES		NO		D. KNOW		NO RESP		TOTAL	
	#	%	#	%	#	%	#	%	#	%
RES-1	4	50	2	25	2	25	0	0	8	11
RES-2	7	25	17	61	4	14	0	0	28	37
RES-3	3	20	8	53	4	27	0	0	15	20
RES-4	4	25	7	44	5	31	0	0	16	21
RES-5	5	62	3	38	0	0	0	0	8	11
TOTAL	23	31	37	49	15	20	0	0	75	100

BY REGION

REGION	YES		NO		D. KNOW		NO RESP		TOTAL	
	#	%	#	%	#	%	#	%	#	%
PACIFIC	8	40	5	25	7	35	0	0	20	27
C & A	3	30	7	70	0	0	0	0	10	13
QUÉBEC	4	36	6	54	0	0	0	0	11	15
GULF	0	0	5	71	2	29	0	0	7	9
SCOTIA FUNDY	6	28	10	48	5	24	0	0	21	28
NFLD	2	33	4	67	0	0	0	0	6	8
TOTAL	23	31	37	49	15	20	0	0	75	100

Q 13

Are the criteria fairly applied?

BY LEVEL

LEVEL	YES		NO		D. KNOW		NO RESP		TOTAL	
	#	%	#	%	#	%	#	%	#	%
RES-1	3	38	2	25	2	25	1	12	8	11
RES-2	7	25	13	46	8	29	0	0	28	37
RES-3	4	27	4	27	7	46	0	0	15	20
RES-4	4	25	6	38	6	38	0	0	16	21
RES-5	4	50	4	50	0	0	0	0	8	11
TOTAL	22	29	29	39	23	31	1	13	75	100

BY REGION

REGION	YES		NO		D. KNOW		NO RESP		TOTAL	
	#	%	#	%	#	%	#	%	#	%
PACIFIC	9	45	3	15	8	40	0	0	20	27
C & A	2	20	7	70	1	10	0	0	10	13
QUÉBEC	3	27	5	45	3	27	0	0	11	15
GULF	0	0	4	57	2	29	1	14	7	9
SCOTIA FUNDY	5	24	7	33	9	43	0	0	21	28
NFLD	3	50	3	50	0	0	0	0	6	8
TOTAL	22	29	29	39	23	31	1	1	75	100

Q 14

Should the criteria be changed?

BY LEVEL

LEVEL	YES		NO		D. KNOW		NO RESP		TOTAL	
	#	%	#	%	#	%	#	%	#	%
RES-1	7	88	1	13	0	0	0	0	8	11
RES-2	20	71	8	29	0	0	0	0	28	37
RES-3	11	73	4	27	0	0	0	0	15	20
RES-4	11	69	4	25	1	6	0	0	16	21
RES-5	4	50	4	50	0	0	0	0	8	11
TOTAL	53	71	21	28	1	1	0	0	75	100

BY REGION

REGION	YES		NO		D. KNOW		NO RESP		TOTAL	
	#	%	#	%	#	%	#	%	#	%
PACIFIC	12	60	7	35	1	5	0	0	20	27
C & A	6	60	4	40	0	0	0	0	10	13
QUÉBEC	8	73	3	27	0	0	0	0	11	15
GULF	7	100	0	0	0	0	0	0	7	9
SCOTIA FUNDY	15	71	6	29	0	0	0	0	21	28
NFLD	5	83	1	17	0	0	0	0	6	8
TOTAL	53	71	21	28	1	1	0	0	75	100

In your opinion, should there be client involvement in the management of the promotion process?

BY LEVEL

LEVEL	YES		NO		D. KNOW		NO RESP		TOTAL	
	#	%	#	%	#	%	#	%	#	%
RES-1	2	25	6	75	0	0	0	0	8	11
RES-2	11	39	17	61	0	0	0	0	28	37
RES-3	5	33	8	53	2	13	0	0	15	20
RES-4	4	25	11	69	1	6	0	0	16	21
RES-5	4	50	4	50	0	0	0	0	8	11
TOTAL	26	35	46	61	3	4	0	0	75	100

BY REGION

REGION	YES		NO		D. KNOW		NO RESP		TOTAL	
	#	%	#	%	#	%	#	%	#	%
PACIFIC	9	45	11	55	0	0	0	0	20	27
C & A	4	40	6	60	0	0	0	0	10	13
QUÉBEC	3	27	7	64	1	9	0	0	11	15
GULF	3	43	4	57	0	0	0	0	7	9
SCOTIA FUNDY	6	29	13	62	2	9	0	0	21	28
NFLD	1	17	5	83	0	0	0	0	6	8
TOTAL	26	35	46	61	3	4	0	0	75	100

APPENDIX D

Promotion Process in Other Federal Science Departments, Agencies and Private Sector

Agriculture Canada

Agriculture Canada employs 795 research scientists in the Research and Food Production and Inspection Branches and at the Canadian Grain Commission. The promotion process is organized as follows:

Promotion Review Committees

Four separate committees exist to review promotion to each level, ie there is a committee which makes recommendations for promotion from RES-1 to RES-2, a committee for promotion from RES-2 to RES-3 etc. The Promotion Review Committees are chaired by a Director, and are comprised of Directors, a human resources advisor (non-rating member) and, for the RES-3, 4, and 5 committees, of senior scientists who also serve as in-depth reviewers.

The normal procedure in Agriculture Canada is that Directors identify those scientists they feel meet the criteria for promotion. In cases where they feel that the scientist does not meet the criteria, they are expected to be prepared to discuss the matter openly with the scientist concerned. Promotion committees for each RES level use the Classification and promotion criteria of the Standard in arriving at their recommendations for promotion to the next level. Candidates are assessed on each of the major factors such as productivity, creativity, leadership, recognition and scope of decision making using the criteria for the RES-1 to RES-5 levels.

Senior scientists, as part of their role, conduct an in-depth review of the candidates against these same criteria and prepare a narrative report on each for presentation to their committee. The Guidelines state that the senior scientists may seek comments from whatever source they wish. In the end, the Review Committee assigns an overall rating of RES level 1 to 5 to each of the candidates based on the predominant rating assigned to the various factors.

Each review committee decides on the recommendations for promotion to be brought forward to the departmental committee. For all promotion recommendations reviewed by the committees the chairperson is required to ensure that a detailed narrative report is prepared outlining the strengths and/or weaknesses of the scientist.

The Departmental Committee

The Departmental Committee reviews the recommendations made by the Promotion Review Committees and makes the final decision on approval of promotions.

The Departmental Committee is chaired by the departmental representative on the IAC. Its membership includes the chairpersons of the 4 Promotion Review Committees, the

Agriculture Canada (cont'd)

Directors General of the Research Branch, a Human Resources Advisor and possibly representation from the Food Production and Inspection Branch and the Canadian Grain Commission.

Unlike Fisheries & Oceans, at Agriculture Canada, the Departmental Committee does not evaluate the individual scientists proposed for promotion. Rather, the procedure is that the chairperson from each of the review committees presents a report on those proposed for promotion and discussion follows.

In the event that a promotion is not approved by the Departmental Committee, the review committee chairperson who has brought the proposals forward is responsible for preparing a report detailing the Departmental Committee's reasons. This report is sent to the candidate's supervising director for discussion with the scientist. The report is expected to outline areas where the scientist will need to improve, but must not give the impression that achieving those improvements would necessarily guarantee promotion. Scientists are entitled to request additional information from chairpersons through their directors.

In the event that the Interdepartmental Advisory Committee refuses any promotions or reclassifications, the departmental representative prepares a detailed report outlining the reasons for this as well as the areas in need for improvement. The report is sent to the supervising director for discussion with the scientist.

Energy, Mines and Resources

Energy, Mines and Resources employs approximately 471 research scientists in three sectors, the Geological Survey of Canada, the Mineral and Energy Technology Sector, and the Surveys, Mapping and Remote Sensing Sector. The promotion process is organized as follows:

Sectoral Committees

Each sector is responsible for conducting its own review of performance and considering recommendations for promotions and transfers to the RES sub-group.

The process begins at the divisional level. After the issue of the annual call letter, Directors of scientific divisions meet with scientists and their supervisors to discuss promotion. Directors have the option of requesting a peer review committee to prepare non-binding advice on whether or not candidates meet the requirements for promotion to the next level, as well as advise on the order in which the candidates should be ranked.

This information is presented to the sectoral committees which are composed of the ADM of the sector, Directors General and Directors of scientific divisions. The sectoral committees examine the dossiers of researchers recommended for promotion in terms of the Classification Standard. There is no mandatory set of procedures for arriving at recommendations for promotion. Providing they act consistently, the sectoral committees are permitted to decide for themselves what method of rating they use. The committees are instructed that they must not attach undue weight to any single criterion, and it is understood that each candidate is not expected to score highly on each of the criteria.

Having reviewed the documentation the sectoral committees will either recommend promotion or determine that promotion is not warranted at that time. Where a sectoral committee elects not to propose a particular research scientist for promotion, the accountable manager will be informed, and this decision made known to the scientist's immediate supervisor. Scientists who are not recommended by their sectoral committee are to be given an explanation and an opportunity to discuss the decision.

The Departmental Committee

The Departmental Committee is made up of the 3 sectoral ADMs, 4 Directors General and 2 Directors drawn from the sectors. The Departmental Committee reviews all promotion and transfer recommendations submitted with full and complete documentation from sector committees, and decides whether a positive recommendation will be accepted.

All dossiers are submitted to the Departmental Committee prior to its promotion meeting, and sectoral representatives on the Committee are expected to review the dossiers of scientists recommended by the other sectors in comparison to those of scientists they have recommended.

At the promotion meeting the Departmental Committee does not repeat the ranking procedure which has been carried out at the sectoral level committees. The Departmental Committee relies on the ranking provided to it by the sectoral committees. Generally those scientists who have been ranked highest at the sectoral level will be recommended for promotion. However, since the number of persons recommended for promotion by the sectors usually exceeds the possible number of promotions, there will generally be more detailed examination of dossiers and performance appraisals at the "cut-off point" in order to arrive at consensus.

Scientists are informed of the Departmental Committee's decision by their divisional Director who discusses the Committee's decision with them.

Forestry Canada

Forestry Canada employs approximately 219 Research Scientists who conduct research and disseminate findings in the area of forest production, forest protection (from fire, insects and disease), forest environment and forest utilization.

Science activities are carried out in regional research institutions which focus on regional aspects of national problems, and in national institutes which focus their attention on more fundamental research of a national or generic nature. Results are then transferred to the forest sector.

Forestry adheres to the criteria found in the Classification Standard. In terms of process, there are Regional/Institute Committees which are composed of the RDG and program directors and may also include senior research scientists. These Committees are not decision making bodies but are responsible for assessing each candidate to ensure that they meet the necessary criteria and ensures that full feedback is given to each candidate under review. It also provides comments to the Departmental Committee which is chaired by the DG, Science & Sustainable Development and comprises of the RDGs, Institute DGs and selected senior scientists. Regardless of the regional recommendation, any scientist may decide to have his or her case reviewed by the Departmental Committee.

Environment Canada

Environment Canada employs approximately 194 research scientists who work primarily on Atmospheric Services and Conservation & Protection. Equal weight is given to the criteria as defined in the IAC guidelines. However, for the higher level RESs, scientific productivity and recognition are the key criteria.

The promotion process is conducted by Service Committees and a Departmental Committee. These committees are responsible not only for the Research Scientists but also the Research Manager positions.

The Departmental Committee is chaired by a Science Advisor who is perceived by the Research Scientist community as being impartial, fair and with a strong interest in science. This committee is comprised of the Service Committee chairs who represent the views and recommendations of line managers. It also has the Director General of Corporate Human Resources as a voting member. One senior Research Scientist at the RES-5 level from each Service employing a significant number of Research Scientists is also a voting member of this committee for a 3-year term. An attempt is made to select this senior RES to represent the range of scientific research disciplines within the Department.

The Service Committees exist for the Atmospheric Research Directorate and Conservation & Parks. The DG of these services chairs the meetings and senior Research Scientists at the RES-5 level are also represented. If required, an additional line manager at the Director level sits on the committee to maintain Directorate or Regional balance.

No external peer reviews are conducted.

Health and Welfare Canada

Health and Welfare Canada has 133 Research Scientists working in the Health Protection Branch (HPB), specifically in Drugs, Environmental Health, Foods, AIDS and Disease surveillance.

A special Departmental RES committee comprised of Director Generals from HPB who recruit research scientists, the Head of Staffing and Human Resources Planning and is chaired by the Director General of the Foods Directorate. The committee reviews and approves all RES promotions and recruitments to the group.

The Department follows the criteria outlined by the IAC and does not use a ranking system. Each committee member individually reviews appraisals prior to the departmental meeting and decisions at the meeting are based on verbal discussion of each recommendation.

Upon approval by the IAC, a memorandum to all HPB staff is issued by the ADM announcing the upcoming promotions and notices of appointments are posted throughout the Branch.

National Defence

National Defence employs approximately 566 Defence Scientists (DS) who engage in scientific research and development, scientific analysis, liaison and advisory functions. The DS Classification Standard is incumbent-oriented and the Salary Administration System is designed to provide a rate of salary progression commensurate with the way in which the employee is developing professionally.

There are 8 levels in the DS sub-group. The employee's state of professional development determines their level and is based on 3 criteria. The relative importance attached to the criteria depends upon the nature the work performed, the level and length of experience of the individual:

(1) Effectiveness and Productivity in Scientific Research, Development and Analysis (SRDA)

Effectiveness in this area is measured by the following sub-criteria:

Expertise	The extent to which a scientist is capable of being a source of current, knowledgeable and dependable data, information, opinion and advice;
Creativity	The extent to which the scientist is the source of new theoretical or experimental approaches, new concepts or systems, or the adaption of existing techniques to novel situations;
Productivity	The quality, quantity and value of accomplishments and contributions to the Department through in-house work, or work as scientific authority in contracting-out and technology transfer activities.
Recognition	The extent to which the scientist's accomplishments and contributions to SRDA are known to and accepted by peers, colleagues and superiors;
Impact	The extent of the scientist has had an impact on the quality, scope or direction of departmental activities and/or added to scientific or technical knowledge;

(2) Effectiveness and Productivity in Representational and Human Relations Activities

This is measured by the scientist's acceptance as a communicator, representative, advocate and negotiator in SRDA. The more important the matters and issues entrusted to the employee, the greater the significance attached to this criteria. This criteria is expressed to be of significance where the scientist in question is engaged in industrial liaison and technology transfer, scientific liaison with the Canadian Armed Forces, other agencies and countries, or is engaged in advisory functions or contracting out.

(3) Effectiveness and Productivity in Managerial Activities

The criteria recognize that the management of defence science involves planning and controlling diversified resources and providing leadership to other scientists, engineers and technologists. Effectiveness in managerial activities is measured by provision of leadership, handling of complexities, obtaining, motivating and evaluating staff, communicating in managerial matters and judgement.

The promotion process at National Defence allows scientists to be accelerated or de-accelerated through these levels.

OTHER AGENCIES

National Research Council (NRC)

The NRC is mandated to conduct research into science and engineering and, in that regard, its reputation is dependent upon its maintenance of a high degree of excellence in both these fields. The NRC employs approximately 1000 researchers which comprises about one-third of its total population. The emphasis is placed on basic research which is measured mainly by the level of professional development in that field as assessed by peer recognition. However, due to economic restraints and cutbacks, NRC is starting to focus its research in terms of service to Canadian industry, who are considered to be their major client.

There are five levels of career progression for scientists in the NRC :

1. Junior Research Officer
2. Assistant Research Officer
3. Associate Research Officer
4. Senior Research Officer
5. Principle Research Officer

This is modeled on the university system of researchers. The criteria used for promotions are :

Quality of Research/Problem Solving

Measured through peer judgement based on an assessment of conceptual originality and profundity, of practical difficulties overcome in the course of the work, and of the breadth of application, effectiveness and impact of the end product.

Level and Extent of Scientific or Technical Knowledge

Contributes to other factors but merits a separate assessment.

Planning Ability

The ability to identify and define resolvable scientific, engineering or technical questions of importance or to identify promising areas of investigation. Assessing the probability, and probable cost, of finding a solution is an important part of this work.

Leadership

This includes inspiring by personal example, the organization and coordination of the efforts of others, the generation of ideas to be pursued by others, the provision of appropriate advice, and the resolution of unexpected difficulties.

National Research Council (NRC)

Technology Transfer and Industry Liaison

A large part of NRC's mandate involves technology transfer and liaison with industry. Besides the production of papers and written reports, this includes the provision of advice to industry and government agencies, input to and management of Research and Development contracts, participation in seminars and conferences, and service on technical or standards committees.

Peer Recognition

Particularly in the higher ranks, a high level of peer recognition is frequently encountered. Measures used for this are : the level of demand for expert advice; participation in the work of, or taking important positions in, associations; assisting in thesis examinations, refereeing papers, or performing other editorial functions; the receipt of honours, awards, invitations to lecture, etc.

Administration

Any activity that increases the effectiveness of other staff members is particularly valuable. This can include program planning, serving on internal committees, arranging seminars or conferences, and so on. Such activity usually denotes higher-than-normal ability to cooperate with others and a broad knowledge of the Division's activities.

Atomic Energy of Canada Limited (AECL)

The research arm of AECL employs approximately 207 research scientists. Almost all the scientific work carried out by AECL is of an applied nature; there is no longer any significant amount of free research currently under way.

The promotion process for the 4 levels of research scientist is no different than that for their engineers. The scientist and his or her supervisor sit down at the beginning of each year and establish certain goals which are agreed upon and formalized.

Decisions with respect to promotion to the next level are based upon the extent to which the agreed goals have been achieved. The system does, however, take account of the fact that a researcher's achievements may be affected by the availability of resources necessary to complete the agreed-upon goals.

Matters such as the number of publications a scientist has to his credit, or his international reputation are not criteria for advancement.

Bell Northern Research

Bell Northern Research (BNR) employs approximately 100 scientists who carry out applied research in the telecommunications field. Very little if any free research is carried out by BNR scientists.

Decisions with respect to appointments and promotion are based upon the following 5 criteria:

- (1) The decision-making scope and judgement expected of a scientist at that level;
- (2) The scientist's problem solving, analytical and technical competence;
- (3) The scientist's leadership impact (extent to which they will be expected to direct the work of subordinates and exert influence outside BNR);
- (4) Whether the scientist meets the job requirements in terms of education and experience;
- (5) Interpersonal skills and range of contacts.

BNR's criteria do provide the possibility of taking account of a scientists publication record, but it is emphasised that the primary criterion is the production of useful devises and products.

Hydro Quebec

Hydro Quebec employs approximately 140 scientists in 4 levels. The role of scientists within the organization is to carry out applied research relevant to the production, transmission and consumption of electrical energy, and to facilitate the transfer of technology and the sale of services to external clients. The objectives of research within Hydro Quebec are stated in a plan which is revised annually to reflect the research needs of the organization.

Classification of scientists is based upon 4 criteria:

- (1) Nature of Activities This criterion includes the nature and extent of activities, and the difficulty and complexity of assignments;
- (2) Scope of Decision-Making Involves the freedom of action given by management to the scientist to carry out their assigned duties. This criterion takes account of the scientist's independence, reliability and personal initiative;
- (3) Results This criterion recognises the scientific and technological spin-offs generated by the scientist's work. Results are assessed in light of the research program's overall mandate to conduct applied research relevant to the needs of the organization;
- (4) Professional Standing The scientist's professional standing within Hydro and outside the organization are assessed by reference to their role on technical committees and in the transfer of technology, requests received for their technical expertise, their publications record, and awards and other honours received from outside Hydro Quebec;

These criteria are applied to each of the 4 employment levels by a matrix which describes what is expected of incumbents at each successive level. The matrix is used by managers and Hydro Quebec's classification committee to arrive at classification decisions. Scientists need not score highly on each criterion, but the committee arrives at an overall assessment of candidate's qualifications.

Spar Aerospace

Spar Aerospace is a private sector satellite communications firm with close links to Canadian and U.S. aerospace agencies. The company employs approximately 350 engineers with various areas of technical expertise who engage in applied research. The company does not engage in fundamental research except by contractual arrangement with government departments such as the Department of Communications.

Employees in the engineering field are involved in all phases of projects. This means that their involvement is not limited to research alone, but includes participation in design and development phases.

There are 6 employment levels for engineers. The classification is incumbent-based, so that employees may progress through the grades without changing jobs. The employees level is linked to their level of responsibility. Performance appraisals are carried out annually, and salary increases are based upon 3 factors:

- (1) Number of years of job-related experience since leaving university;
- (2) An annual performance rating score;
- (3) Recommendations from the engineer's supervisor;

APPENDIX E

Promotion Process for Research Scientists in Other Countries

PROMOTION PROCESS FOR RESEARCH SCIENTISTS IN OTHER COUNTRIES

Report for the Department of Fisheries and Oceans Canada

P.A. Larkin

**Vancouver, B.C.
December 1992**

INTRODUCTION

Scientists employed in government and laboratories generally fall into one of two broad categories: those who are expected to do research that generates new knowledge and, those who are expected to apply contemporary knowledge in the day-to-day management of public affairs or resources.

Individuals in the latter group may be evaluated for promotion by the well known and virtually standard routines of performance appraisal. The employee is fully aware of the job description, is informed about what is expected in the way of performance, is promoted with good performance, and if not promoted, knows why. Advancement to a higher level frequently involves a competition and interviews of a short list of candidates.

For scientists in the former group, who are expected to be creative, evaluation may be much more akin to the processes at universities where strong emphasis is placed on research productivity and performance in relation to the norms for the subject area of research. The usual "package" of research related information to be used in promotion decisions contains the candidates curriculum vitae which gives publications, awards and honours, and includes letters of reference from "arm's length" external peers.

PROMOTION AT UNIVERSITIES

Universities (especially large ones) tend to be schizophrenic in their evaluations of research contributions. Faculty members in traditional disciplinary departments (chemistry, philosophy, physics, etc.) are evaluated for whatever research area they happen to have chosen to be good at, but those in applied fields (engineering, forestry, fisheries, etc.) are chosen not only for what they are good at, but also, whether the research they do has some relevance to the "problems" or "issues" in society. At universities excellence usually triumphs over relevance as a criterion for promotion, but where there is a shortage of excellence, relevance tends to come to the fore in the presentation by the Dean of a candidate for promotion. Other criteria, such as teaching and administrative service, are also involved in the decision to promote at universities, and these too are often given more prominence if the excellence and/or relevance are a bit weak. (Attachment A gives some typical university rubber edged guidelines. They are from the University of British Columbia and differ from those of other Canadian universities only in the choice of adjectives and adverbs.)

When it comes to the crunch, excellence in research is the only sure way to promotion. Universities have recently been criticized for placing too much emphasis on research in

Promotion Process for Research Scientists in Other Countries

promotion decisions, but scholarly elitism remains the name of the game. The excellent treatise on the sociology of the "Reward system in British and American science" by Jerry Gaston (1978 John Wiley and Sons) spells out both the philosophy and the statistics of the way the system works. (e.g., In a sampling of 600 scientists, the average career production was 27.9 papers over 18.4 years. One quarter produced seven or less, one half 18 or less, three quarters 39 or less and only 28 of the 600 scientists produced more than 98 publications.) The community of researchers is global, the fundamental ethic is criticism as the way to truth. The profession of research is in many respects quasi-religious in its purported aspirations. The excellent teacher is known only to the perimeter of the campus, the excellent researcher has a global reputation, etc.

Since the time Gaston's book appeared, universities have responded to various pressures and have increasingly recognized teaching as well as contributions other than papers, such as patents and copyrights, and extension activities that reflect the transfer of knowledge and know how from the research laboratory. But still, the primary emphasis is on excellence and sophistication. A professor of engineering who develops a new kind of screwdriver may get rich but will not get promoted for it, but the professor who develops a new computer logic processor will get promoted as well as rich.

In the university system great credence is placed on peer review mechanisms, though they are an endless topic of debate (for example, there have been controversies in the past few years in the United States, France and the United Kingdom). Nevertheless, peer assessment, both by internal processes (promotion committees) and from external referees is almost universally seen to be essential to the promotion process.

PROMOTION IN GOVERNMENT LABORATORIES

Much the same story may be told in government laboratories where individuals, tending to settle into what they are personally best at, are evaluated on a mixed set of criteria that includes excellence in research, relevance to the mission of the laboratory and service to the laboratory in administrative or extension roles.

In recent years there has been a worldwide trend to place increased emphasis on relevance of the research to the mission of the government organization and the tangible benefits to society that might or did ensue from application of the research findings.

Promotion Process for Research Scientists in Other Countries

At the same time there has been a trend to more precise articulation of the criteria for promotion and development of more elaborate procedures of evaluation. If all researchers are expected to perform both research and service roles and if research counts for more than service, the employee must know by how much, so that effort may be apportioned in relation to the rules of the reward system. And if the employee is hired to be a research scientist, then the criteria should be weighted so as to ensure that a substantial research productivity is essential for promotion.

These trends lead inevitably to a performance appraisal system that is similar in form to that for non-research scientists, but which has different criteria for promotion. Attachments B and C spell out the general approach.

Among the countries and institutions for which material is attached, the Commonwealth Scientific and Industrial Research Organization of Australia seems to have gone furthest in this direction.

The major shortcoming of these systems according to their critics, is that a great deal depends on the local laboratory head. The criteria, the expectations and the performance may all be "fudged" to some extent so that the complex, time consuming performance appraisal is just a charade to disguise subjective assessments. Everyone knows which research scientists are worth promoting on their research merit and all the rest is simply a way of making a case for those of borderline merit.

The major advantage of these systems, according to their proponents, is that they are fair and forthright, the facts are all on the table and employees clearly understand what is expected of them.

The following sections sketch the criteria and procedures for research scientists in various countries and institutions.

AUSTRALIA

The Australian Commonwealth Scientific and Industrial Research Organization has recently developed a comprehensive "performance planning and evaluation program" which is built on the premise that advancement should be based on the satisfactory achievement of agreed work objectives and competencies. The program covers a full spectrum of "functional areas" (such as "research management", "research scientist/engineer", "research projects", "technical services") and for each area there are

Promotion Process for Research Scientists in Other Countries

defined two or three "critical competencies" and five "elective competencies" of which three are chosen by the employee in consultation with management. (Attachment D page 12).

Thus for a research scientist/engineer, the critical competencies are "application of knowledge", "problem solving" and research innovation" and the elective competencies are "adaptability", "communication", "independence", "judgement" and "resource management".

For each functional area there are several "levels". For the research scientist/engineer area, levels five to eight describe progressively higher degrees of performance in each of the competencies. (Attachment D₂, page 1.)

Throughout the system, promotion is on merit, not on the basis of establishment positions. All staff are reviewed annually. A "case" for promotion may be made by an individual or supervisor, but is usually written in collaboration. Approval is at the divisional level. The whole system builds on a single salary structure where there were at one time 23 structures.

The performance evaluation is critically dependent on the setting of the agreed objectives against which performance is to be measured. The objectives are in two sets a) work objectives (what is to be done) and b) competency objectives (how to improve oneself). Performance as measured by publications *per se* is downplayed. Citation indices are not used. Industry acknowledgement of value of the work is critical. Some consideration may be given to international reputation and overseas invitations, but, in general, the new system is strongly oriented to results that are immediately tangible and applied.

A scheme that had been developed by the Wildlife and Ecology Division of CSIRO and presumably has now been replaced by the new performance evaluation, is worth comment as a somewhat elaborate system of assessing merit for promotion. A "Research Accountability Score" is computed from material provided by the scientist to a review committee which estimates:

$$\text{Research Accountability} = (\text{SP} + \text{RE} + \text{C})/5$$

Where SP = Scientific Publications

Where RE = Research Effect

Where C = Communication & Commitments

Maximum score of 20

Maximum score of 20

Maximum score of 10

Promotion Process for Research Scientists in Other Countries

With respect to the SP component, the scientist provides a list of publications for the previous five years, self assessing points as follows:

- 0.5 Technical memoranda, internal reports of substance, manuals for software, unpublished, unrefereed conference papers
- 1. Short papers on externally refereed reports of minor importance
- 2. Papers in recognized good journals
- 3. Papers of major importance, editor of a book
- 10. Chapter of a book
- 15. Substantial book

Fine print covers such matters as joint authorship and papers unrelated to the scientist's program objectives. The sum of the publication scores is place into one of 21 classes (0-20) based on class intervals of 2.5 to give a score ranging from 0 to a maximum of 20. Thus, a scientist who wrote a book (15), a chapter of a book (10) and three good papers (9) and five technical memoranda (2.5) would receive an SP score of 15, being in the 14th class interval of 35 to 37.5 points.

The Research Effect score is based upon:

- 1. The Science (or Social Science) Citation Index for the previous two years, roughly associating 5 citations per point up to 10 citations, 10 per point up to 50, 25 per point up to 100 and, 50 per point beyond 100, with a maximum of 10 points.
- 2. A maximum of 10 points based on a statement **with dates** of the "significance of the research", i.e., "how it has influenced either policy or resource management, or how it has applied in other ways for the benefit of society on the national interest". "Unsupported general statements and statements attending to the potential or future value" are not considered. There is further fine print!

The Communications and Commitments score is based on services on committees, minor reports, lectures and training activities, reviews of manuscripts and administrative duties, also spelled out with fine print.

All of the above is overseen by an inhouse technical committee (for which the committee members presumably get credit!).

Promotion Process for Research Scientists in Other Countries

This system may seem like the invention of an overzealous clerk, but it has the merit (typically Australian) of being forthright and transparent. If you do not get promoted, your surely know why!

The other "bottom line" of this whole exercise is that operating funds for research programs are allocated in large measure (75 to 80 percent) according to their proportion of the sum of the Research Accountability scores.

Attachment D₃ gives more detail.

UNITED STATES

For research positions in the National Marine Fisheries Service (NMFS) of the National Oceanic and Atmospheric Service (NOAA) of the United States, evaluation is based on a Research Grade Evaluation Guide (Attachment E) which recommends evaluation in relation to four factors:

1. Research situation: nature, scope, complexity, challenge.
2. Supervision received: degree of freedom in choosing course of action, finality of recommendations
3. Guidelines and Originality: Creativity and judgement, insight, resourcefulness, impact of studies
4. Qualifications and Scientific Contributions: Total Qualification, professional standing, recognition, particularly as they impact on the job.

Each of the first three factors are scored either 2,4,6,8, or 10 and the fourth is double weighted and scored 4,8,12,16 or 20. The score is then translated into a GS grade (5 to 15) by reference to "Grade-Determination Chart" (Attachment F). Grades 5-9 are technical rather than research oriented and need not concern us here. Grades 11 to 15 are related/correspond to scores as follows:

Promotion Process for Research Scientists in Other Countries

Grade	Score
GS11	8-12
GS12	16-22
GS13	26-32
GS14	36-42
GS15	46-52

Where the scores fall between the ranges given it may be assigned to the Grade above or below based on considerations not covered in the four factors.

Procedures vary within and between agencies. The Evaluation Guide recommends panels comprised of researchers from a variety of disciplines and professional "position-classifiers". The change over time that often occurs in research positions is recognized and periodic review is recommended.

The Environmental Research Laboratories of NOAA have one of the most formalized procedures for evaluation (Attachment G) and relates GS11-15 to university ranks as follows:

Grade	Rank
GS11	Instructor
GS12	Assistant Professor
GS13	Associate Professor
GS14	Senior Professor
GS15	Professor

Letters may be sent to university referees asking "at what rank would this person be in your institution?"

Both NMFS and NOAA recognize that on rare occasions a "research star" exceeds all others in GS 15 by a wide margin, and just as universities name a few "distinguished professors" so are few government research scientists given special recognition.

NOAA is currently working on developing procedures to be used by all NOAA agencies (Attachment H).

Promotion Process for Research Scientists in Other Countries

NEW ZEALAND

Because it is a relatively small country, New Zealand can have a single nation wide competition for promotion for fisheries research scientists. Every two years, scientists are required to outline their duties and achievements (Attachment I) and can make a request to appear before the rating panel. Regional and Centre Managers are required to rate the scientists in one of four categories (Attachment J)

- A Promotion recommended
- B Promotion not recommended but expected to progress in time
- C Performance to improve before promotion
- D Unsatisfactory performance

Those in category A and the upper half of category B must be placed in order of priority for promotion.

The dossiers of all of the scientists are reviewed by a panel of five comprising the managers of freshwater and marine research and three regional managers (i.e., all the top brass). The panel assesses merit and priority for promotion (Attachment K) on the Basis of:

1. Technical competence
2. Management competence
3. Personal characteristics and attributes
4. Educational and professional achievements

A selection of scientists is interviewed by the panel to establish "bench mark" positions. There is no fixed number of positions at various grades.

UNITED KINGDOM

The system in the United Kingdom accords to a standard performance appraisal model, heavily laden with Trade Union type of contractual language. Candidates for promotion are reviewed annually by a panel of three or four. for the Scientific, Professional and Technical Grades members of the panel must have appropriate technical knowledge and themselves be at least at an equivalent or near equivalent grade.

Promotion Process for Research Scientists in Other Countries

Evaluation focuses on "personal qualities", "approach to work", "communication skills", "management skills" and "technical skills".

Candidates for promotion have the right to ask for an interview, appeal a decision and register a grievance. The Trade Union may make representation to the panel. There are a fixed number of positions so that a person may be recommended for promotion but will not be promoted until a position becomes open.

Attachments L, M and N describe the system, which has nothing to commend it that I can see.

CGIAR

The Consultative Group for International Agricultural Research (CGIAR) is an informal consortium of donors (one of which is Canada) that supports 18 international research centres of which 13 are agricultural commodity based (e.g., the International Rice Research Institute that inspired the "green revolution") two are concerned with forestry, one with fisheries and two with policy. The centres vary in size with professional staff complements ranging from 15 to 150. In many respects they have similar missions to national research agencies of developed countries in that the emphasis is on long term mission oriented activity.

The centres of the CGIAR system do not have a system wide set of guidelines or criteria for promotion and remuneration of scientists who have various mixes of research and administrative responsibility. Nevertheless, the continuing dialogue among the Centre Directors-General and Board of Trustees has brought about some measure of uniformity in both levels of salary and benefits packages. Bearing in mind that there are trade-offs between salary and benefits, differences in pay scales for nationals and expatriates, and that most scientists in their institutions are employed on renewable short term contracts, comparisons of their salary levels with those of Canadian scientists in government laboratories are not readily interpreted.

Guidelines for evaluation of scientists in purely research roles in the centres generally place emphasis on both excellence and relevance. For example:

Promotion Process for Research Scientists in Other Countries

1. Publications (having regard to sole or senior authorship, vehicle of publication, amount of repetition, etc.)
2. Citation and impact indices (interpreted with due regard to the shortcomings of systems of compiling article citations and assessing scientific impacts)
3. Awards and honours for research achievements
4. Invitations to conferences, workshops, seminars, etc.

For Relevance:

1. Relevance to the mission of the Centre
2. Applications of the research benefits to the target group of clients (for many of the centres the target group is the rural poor of the developing countries)
3. Patents and other proprietary rights (frequently held by Centres or funding agents for royalty free use in developing country agencies.)

One of the more progressive centres, the International Centre for Research in the Semi-Arid Tropics (ICRISAT), depends heavily on formalized job descriptions and yearly measurement of performance in relation to goals that were set in discussion with the employee the year previous. It is a fairly highly structured organization with a set number of positions for each of the various roles that are to be performed. The system is said to have the great merit of being very fair and forthright but may become too rigid.

This sort of approach is being encouraged by the secretariat of the CGIAR who express the view that traditional procedures of evaluation may have demoralizing effects on scientific staff, especially if the procedures are secretive and arbitrary. When the purpose of evaluations is to motivate researchers to higher levels of achievement they can be valuable instruments of personnel policy. This theme is well developed in Appendices B and C, which are being recommended to Centres for their consideration and were in fact written by staff of one of the CGIAR Centres, the International Service for National Agricultural Research.

Promotion Process for Research Scientists in Other Countries

In recent years the appointments of Directors General for centres have placed more emphasis on administrative and managerial skill than on scientific ability and performance. There are several possible explanations, including some experiences of poor management in countries where lack of infrastructure and political turmoil are chronic problems. In such circumstances, Directors General need managerial skills more than research sophistication.

GERMANY

The reward system in Germany is strongly tilted in the direction of research productivity. Initial appointments are based on interviews and applicants are judged 70 to 80 percent on the quality of their science and 20 to 30 percent on the potential for research management. Appointments are virtually "contracts for life". With strong research performance, a scientist may "rise" to the level of Deputy Director of an Institute, through 13 to 15 grades. Every two years, salaries are increased 2 percent, automatically within a grade but subsequently only on promotion to a higher grade.

Directors are appointed in a separate process at one of these levels and are viewed as comparable to "Professors" (i.e. Department Heads) of University Departments.

An interesting feature of the German system is that if a researcher gets an offer from a foreign country or from a German university, an appeal can be made to the Minister for a promotion to a higher grade or for a special salary increase. (This seems to be a subject for potential abuse, but if it is faked or done too often it could backfire badly!)

The key to the German system is getting into it in the first place. The competition is very fierce. Promotion is based on review and assessment and is heavily loaded for research performance. Critics of the system argue that scientists of government research institutes are too much like university professors in their research aspirations. Much if not most of the research has little apparent relevance to current social issues and many are "hiding behind the skirts" of a few Nobel prize winners instead of doing something useful.

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PEOPLE'S REPUBLIC OF CHINA

In the People's Republic of China the reward system was for a few years modelled after that of the USSR placing most emphasis on research productivity as measured by publications. More recently, emphasis has shifted to the "results": what happened to increase productivity or to achieve national goals. For example, a scientist who developed a technique that was widely used for increasing yield of cotton by spraying crops with plant hormones was given promotion and perquisites such as travel abroad.

Seniority seems to be considered as almost synonymous with managerial ability, a Confucian sentiment perhaps, but not without some statistical merit. In any event, the essential guidelines for promotion are seniority and accomplishment as measured by "results".

JAPAN

In Japanese agriculture and fisheries research agencies, newly recruited university graduates are evaluated on the basis of their promise for research. After a two year period of "orientation" (somewhat like a post-doctoral in a government laboratory) and provided they perform adequately, they are then appointed to the first of five grades. At the lower grades, the emphasis is primarily on research performance as measured by publications with particular attention to and applicability of the findings. At the higher grades progressively greater emphasis is given to managerial ability. "Only rarely" is a promotion to the fifth level based on research performance alone and "only very rarely" to the fourth level on managerial ability. The system is thus designed to ensure that top level managers have a track record of research, but may not ensure that they have managerial talent.

NORWAY

The promotion system in Norway follows closely that for universities. Permanent positions are advertised and applicants are reviewed by peer committees with two internal and one external members for junior grades and one internal and two external members for senior grades.

Promotion Process for Research Scientists in Other Countries

Evaluation is based on similar criteria as for universities with publications most important but other activities considered, such as scientific cruises and advisory committees.

In recent years there has been a tendency to place more emphasis on the relevance of the research, but this is done in the evaluation of the project rather than in the evaluation of the scientist. Thus, there is explicit support to those who propose to perform work deemed relevant to the organization. "In consequence, there are more opportunities for publications and other products of research that "may help an employee in career advancement."

In the words of Stein Bie of Noragric, "there is de facto (but not de jure) very significant weight put on performance that is in the interest of the organization....those employees whose work has proven to increase the reputation and/or income of the organization will normally benefit from this in salary negotiations".

The trends are therefore clear,..... But the actual legalities seem to lag a bit behind both the will of the employers and the acceptance of the unions".

Attachment O gives the correspondence.

ICELAND

The information received from Iceland concerned the criteria for promotion at universities and by inference these also apply to research scientists hired by government. Attachment P gives the documentation which is essentially similar to that for a Canadian university in recognizing research, teaching and administrative contributions in considering promotion.

* * *

APPENDIX F

Classification Matrix for RES-1 to RES-5

CLASSIFICATION AND PROMOTION CRITERIA

CRITERIA	RES 1	RES 2	RES 3	RES 4	RES 5
<u>GENERAL DESCRIPTION</u>	normal entry level for junior research scientist or research scientist with less than average cumulative achievements	working level research scientist with average cumulative achievements	experienced research scientist with above-average cumulative achievements	mature research scientist with distinctly superior cumulative achievements	exceptional research scientist with outstanding cumulative achievements
<u>PRODUCTIVITY</u>					
(Identifiable outputs of a scientific or technical nature)	recognized contributions to R&D	contributions in quantity and quality to evidence average competency and productivity	contributions in quantity and quality to evidence above-average competency and productivity	continued contributions in quantity and quality to evidence superior competency and productivity	continued contributions in quantity and quality to evidence outstanding competency and productivity
Productivity may be evidenced by any of the following:					
<u>Publications</u>					
- papers of original work	publishable additions to scientific knowledge as author or co-author	authorship or co-authorship of average # of papers of acceptable quality, or fewer of above-average quality	authorship or co-authorship of substantial # of papers of above-average quality or fewer of superior quality, demonstrating above-average R&D ability & mastery of a significant field of specialization	authorship or substantial contributions as co-author of extensive publications of superior quality or significance, demonstrating superior R&D ability & mastery of a substantial field of specialization	authorship or substantial contributions as co-author of extensive publications of excellent quality and significance, demonstrating outstanding R&D ability & leadership in a major field of specialization
- technical notes or letters					
- memoirs					
- books, or parts					
- investigative reports					
- unpublished confidential reports					
<u>Reviews</u>					
	no expectation	occasional authorship or co-authorship of authoritative reviews in limited fields of knowledge	frequent authorship or co-authorship of authoritative reviews in limited fields of knowledge	authorship or co-authorship of authoritative reviews in fields of knowledge that are moderate in scope and complexity	authorship or co-authorship of authoritative reviews in fields of knowledge that are broad in scope, very complex or highly advanced

CRITERIA	RES 1	RES 2	RES 3	RES 4	RES 5
<u>Innovation</u>					
- patents	limited achievement	average achievement in creative development	above-average achievement (e.g. moderate new patents or genetic varieties)	superior achievement (e.g. significant patents or genetic varieties)	outstanding achievement (e.g. outstanding new patents or outstanding genetic varieties)
- improved genetic material					
- improved designs					
- improved processes or systems					
<u>Technology Transfer</u>					
- impact of technology transfer	limited degree of involvement	average record of successful transfer of usable applied science and technology to users and clients	above-average record of successful transfer of usable applied science and technology with significant impact to users and clients	superior record of successful transfer of usable applied science and technology with substantial impact to users and clients	outstanding record of successful transfer of usable applied science and technology with major impact to users and clients
- technical publications, reports, presentations	contributions to reports having limited impact on technology transfer	author or co-author of a moderate number of reports having recognized impact on technology transfer	author or co-author of a significant number of reports having recognized impact on technology transfer	author or co-author of an extensive number of reports having major impact on technology transfer	author or co-author of an extensive number of reports having exceptional impact on technology transfer
<u>Cooperative Research</u>					
- scientific authority	limited contributions	average record of contributions in contracted-out R&D, requiring limited definition, execution & evaluation activities	above-average record of significant contributions in contracted-out R&D, requiring definition, execution & evaluation of activities	superior record of significant contributions in contracted-out R&D, requiring extensive & original definition, execution & evaluation of activities	outstanding record of significant contributions as scientific authority in contracted-out R&D, requiring exceptional and original definition, execution & evaluation of activities
- joint venture projects	limited contributions	average record of significant joint venture R&D, requiring limited definition, execution & evaluation of activities	above-average record of significant joint venture R&D, requiring definition, execution & evaluation of activities	superior record of significant joint venture R&D, requiring extensive & original definition, execution & evaluation of activities	outstanding record of significant joint venture R&D, requiring exceptional and original definition, execution & evaluation of activities

SCIENTIFIC AUTHORITY
Research Scientist

CRITERIA	RES 1	RES 2	RES 3	RES 4	RES 5
- collaborative and multi-disciplinary research	limited and primarily with colleagues within the institution	average record; may involve colleagues in other institutions, or in regions and provinces	above average record of significant contributions; projects may be national in scope, requiring considerable planning and resource coordination, and possibly involving several scientists in the collaboration	superior record of significant contributions; may be international in scope, requiring extensive planning of resources and activities, and may be multi-disciplinary in nature	outstanding record of significant contributions; initiator or leader of significant projects requiring exceptional degree of planning, coordination and evaluation, and extensive resource inputs, usually international in nature and perhaps multi-disciplinary
- contracting in	limited contributions	average record of significant contracted-in R&D, requiring limited definition, execution and evaluation of activities	above-average record of significant contracted-in R&D, requiring definition, execution & evaluation of activities	superior record of significant contracted-in R&D, requiring extensive and original definition, execution and evaluation of activities	outstanding record of significant contracted-in R&D, requiring exceptional & original definition, execution & evaluation of activities
<u>CREATIVITY</u> (imaginative approaches, concepts and ideas for the advancement of research and the development of technology)	demonstrates creativity in the modification of techniques and methods and in the generation of ideas and proposals for research and investigations	demonstrates average creativity in the conception of new techniques and methods and in the generation of ideas and proposals for research investigations	demonstrates substantial creativity in the conception of new approaches and methods where guidelines and precedents are inadequate and in the generation of significant ideas and proposals for R&D	demonstrates superior creativity in the conception of significant approaches and innovations where precedents are manifestly inadequate and in the generation of significant ideas and proposals for R&D	demonstrates outstanding creativity in the conception of major ideas, approaches and innovations where no precedents exist and in the generation of major ideas and proposals for R&D
<u>RECOGNITION</u> (stature in scientific community)	recognition at entry level	regional or collegial recognition	national recognition	national or international recognition as an authority	national and international recognition as an authority
- literature citation	no expectation	occasionally cited	regularly cited	frequently cited as a recognized authority	extensively cited as an international authority

CRITERIA	RES 1	RES 2	RES 3	RES 4	RES 5
- honours, invitations and awards	no expectation	average honours	substantial honours	superior honours	outstanding honours
- role in scientific societies and committees	membership in societies	active participation in scientific societies	invited to present papers at national conferences holds local or chapter office in scientific societies	received national merit award session chair or panel member at national conferences holds office in national scientific societies	received international merit award conference chair or keynote speaker at national or international conferences holds executive office in national or international scientific societies serves as official delegate at international meetings and on national committees
LEADERSHIP					
- (influence on scientific community and direction of scientific programs)					
Scientific Leadership					
- consultation	consulted by fellow scientists and technicians within project	consulted by colleagues, superiors and workers in government in a restricted field of R&D	consulted within and outside government in a substantial field of R&D	widely consulted within and outside government in more than one significant field of R&D	widely consulted within and outside government in several substantial fields of R&D and on broad policy direction
Degree of Influence	participates in section discussions, symposia and presentations	participates in activities in field of specialization	provides leadership in field of specialization	provides substantial leadership in more than one field of specialization	exercises substantial leadership on R&D directions taken nationally and internationally
- degree of influence					

CRITERIA	RES 1	RES 2	RES 3	RES 4	RES 5
<u>Program Leadership</u>	no expectation, limited influence on establishment plans, policies and operations	no expectation, limited influence on establishment plans, policies and operations	demonstrates leadership ability, influences branch plans, policies and operations	demonstrates superior leadership ability, significant influence on departmental plans, policies and operations	demonstrates outstanding leadership ability, and has determining influence on plans, policies and operations within the department and perhaps government
<u>SCOPE OF DECISION-MAKING</u> (latitude in determination and control of work)					
<u>Degree of supervision</u>	under established guidelines, little discretion in setting and approach to achieving objectives	under limited guidelines, some discretion in setting and approach to achieving objectives	under minimal guidelines, significant discretion in setting and approach to achieving objectives	substantial discretion in setting and approach to achieving objectives	exceptional discretion in setting and approach to achieving objectives
<u>Independence</u>	participated in projects in a well-defined area of investigation	independently conducts some research, or leads a part of a significant group project	independently conducts research, or leads a part of a significant large project, including decision-making	independently conducts significant research, or acts as a prime leader of a large research project	independently conducts or leads major research, or is responsible for a high level of scientific coordination within or outside government
<u>Judgement</u>	under direct supervision, limited judgement exercised	under general supervision, average level of discretion in identifying, defining and selecting study	significant level of discretion in identifying, defining, selecting and carrying-out study	substantial level of discretion in identifying, defining, selecting and carrying-out study	exceptional level of discretion in identifying, defining, selecting and carrying-out study

APPENDIX G

Flow Chart of DFO Promotion Process

RESEARCH SCIENTIST PROMOTIONAL REVIEW PROCESS FISHERIES AND OCEANS

INTER-DEPARTMENTAL ADVISORY
COMMITTEE, IAC

Agriculture
Emilement
Forestry
Human Resources
Communications
Fisheries and Oceans
Health and Welfare
Energy, Mines and Resources
Treasury Board
Public Service Commission

Chaired by - IAC Chairmen

Attending - Secretary
- Departmental IAC Members
- Technical Advisors
- Personnel Officers

IAC Chairman receives for review all promotion
recommendations from departments.

The Committee reviews promotion nominations to the
SI-RES 2, 3, and 4 levels. Each departmental IAC
member must be ready to answer queries concerning
his/her department's candidates from other committee
members. The nominations that are reviewed are the
department's weakest cases for promotion. For
example, if a department has 3 nominations to put
forward from the SI-RES 2 to 3 level, it is the
weakest case of the 3 that is reviewed. If the
committee concurs that the employee warrants a
promotion then the other 2 nominations for promotion
being stronger are automatic. If the Committee does
not approve the nomination, it would then proceed to
review the next strongest case. Lengthy discussion
can ensue over a candidate's stated performance.
When a nomination is turned down by the committee,
the chairman will state the reasons why and may
offer suggestions as to what the employee may do in
future to be considered for promotion again. This
information is conveyed to the unsuccessful
candidate by the departmental IAC member. After
completion of the promotion review, the committee
discusses other related business.

Copies of appraisal and promotion documents
forwarded by the Secretary of IAC to IAC members in
departments for their preliminary review. Advance
copies give members time to study each department's
nominations for promotion.

Personnel Officer forwards promotion documents (10
copies each) of each employee being put forward for
promotion, plus SI-RES departmental statistics to
IAC in preparation for IAC meeting.

In early January, the Secretary to the
Inter-Departmental Advisory Committee (IAC) notifies
departments of the date of the next IAC meeting to
review the annual departmental SI-RES nominations
for promotion. Letter includes general instructions
regarding meeting, requests SI-RES statistics from
departments. (All documentation including
appraisals, statistics must be with the IAC two to
three weeks before the actual date of the meeting.)

Usually, in late November or early December, the
Personnel Officer begins to gather SI-RES data.
Regional inventory to update SI-RES inventory,
data on current and future staffing actions,
termination and retirement data.

In mid-December, annual call letter for SI-RES
appraisal and promotion recommendations goes out
from Headquarters under signature of the Assistant
Deputy Minister, Science. Call letter includes
instructions on procedures, schedules, etc.
Normally, meetings of the Committee, convened to
review promotion recommendations, are scheduled
early in February.

Personnel Officer after gathering SI-RES data sends
preliminary statistics on the department's SI-RES
population to the departmental IAC representative.
Included as well are projected figures on the number
of SI-RES promotions which can be actioned under the
Treasury Board guidelines. Adjustments of
promotional figures can take place after final
population data both current and projected to
March 31 are known. IAC (Treasury Board) stipulate
that the SI-RES population in a Department should
not exceed 3% for SI-RES-1 and 5% for SI-RES-2.

Minutes of the Committee meeting are prepared by the
secretary and distributed to participants. However,
no promotion action can be taken until IAC approval
has been received.

DAY 1 AND 2

DEPARTMENTAL REVIEW COMMITTEE

CHAIRMAN: DEPARTMENTAL IAC REPRESENTATIVE

ATTENDING: REGIONAL REPRESENTATIVES
SECRETARY
PERSONNEL OFFICER

The purpose of this meeting is to review nominations
for promotions submitted by the regional offices.
Bearing in mind the number of promotions allowed,
the committee carefully compares the dossiers
submitted with the level standards and eventually
accepts or rejects nominations for promotion.
Successful nominees are ranked strongest to weakest
by level and are henceforth referred to as
departmental nominees. Unsuccessful nominees have
their appraisal forms signed by the Chairman of
the Review Committee with an explanation of the
action taken.

NOVEMBER

OCTOBER

JANUARY

DECEMBER

MARCH

APRIL

MAY

Secretary, IAC Committee issues minutes of IAC
meeting and forwards to respective departments.
This action authorizes departments to begin their
promotional actions.

Personnel Officer notifies Regional
Personnel Managers of promotion
results and requests reclassification
and pay action for employees

APPENDIX H

Interdepartmental Committees Involved in the Promotion of Research Scientists

**Steering Committee on the Management
of Science and Technology**

Dr. K. Babcock	ADM, Geological Survey of Canada, Energy, Mines and Resources
Mr. N. Bhumgara	DG, Science and Professional Services Directorate, Supply and Services Canada
Dr. R. Breithaupt	DG, Communications Research Center, Communications Technologies Research Branch, Department of Communications
Dr. M. Brochu	Secretary General, Natural Sciences and Engineering Research Council
Mr. B. Carin	ADM, Economic Policy and Trade Competitiveness Branch, Department of External Affairs
Dr. A. Chisholm	Science Advisor, Environment Canada
Dr. P. Colgan	Assoc. Dir. Programs Branch, Canadian Museum of Nature
Dr. W. Doubleday	A/ADM Science, Department of Fisheries and Oceans
Ms E. Dowdeswell	ADM, Atmospheric Environment Service, Environment Canada
Dr. M. Everell	ADM, Mineral and Energy Technology Sector, Energy, Mines and Resources
Mr. K. Foster	ADM, Personnel, Department of National Defence
Mr. M. Francino	DG, Economic Development Policy Branch, Department of Finance
Mr. S. Gershberg	Asst. Sec. Economic Programs Sector, Treasury Board Secretariat
Mr. T. Lee	ADM, Policy, Forestry Canada
Dr. B. Morrissey	ADM, Research, Agriculture Canada
Mr. D. Mulcaster	ADM Research, Department of Communications

Mr. R. Paton	Deputy Sec. Administrative Policy Branch Treasury Board Secretariat
Dr. K. Peebles	Chief, Research and Development, Materiel Branch, Department of National Defence
Mr. G. Pokotylo	DG, Research and Development, Transport Canada
Mr. M. Rosenberg	ADM, Corporate Affairs and Legislative Policy Consumer and Corporate Affairs
Mr. H. Rothschild	ADM, Science, Industry, Science and Technology
Mr. W. Rowat	Asst. Sec. Economic and regional Development Policy Privy Council Office
Mr. B. Salley	Sr. ADM, Western Economic Diversification Canada
Mr. B. Sterparn	Dir, Federal Research Directorate, Industry, Science and Technology
Dr. C. Willis	V.P. Science, National Research Council

Working Group on S&T Human Resources Management

Dr. J.C. St.Pierre	DG, Central Experimental Farm, Agriculture Canada
Mr. G. Moore	Personnel Advisor, Agriculture Canada
Ms. D. Bertrand	Personnel Advisor, Human Resources Branch, Department of Communications
Ms. H. Smith	Department of National Defence
Mr. D. Smith	Planning Officer, Human Resources Planning, Corporate Division Energy, Mines and Resources
Dr. T. Jubb	DG, Mineral technology Branch, Energy Mines and Resources
Dr. H. Eisenhower	Special Advisor, Technical Development Program, Environment Canada
Mr. B. Newnham	Chief, Executive Group, Personnel Administration Program, Environment Canada
Mr. G. Boyd	Policy Advisor, Science Branch, Fisheries and Oceans
Mrs. G. Danis	Personnel Directorate, Corporate Management Branch Fisheries and Oceans
Dr. L. Carlson	Director, Forest Health, Policy Branch, Forestry Canada
Ms. S. Sudnikowicz	Advisor, Human Resources Planning, Personnel Directorate, Forestry Canada
Mr. K. Kirk	Professional Development Coordinator, Health Protection Branch, Health and Welfare
Dr. S. Gunner	DG, Food Directorate, Health Protection Branch, Health and Welfare Canada
Mr. M. Lajoie	Officer, Staffing Policy and Selection Standards, public Service Commission
Ms. J. Larose	Project Manager, Human Resources Development Branch,

Treasury Board Secretariat

Mr. S. Khubchandani

**Chief, Coordination Section, Research and Development
Directorate, Policy and Coordination Group, Transport Canada**

Mr. P. Gendron

**Sr. Analyst, Federal Research Directorate, Science and
Technology Strategy Branch, Industry, Science and Technology**

Interdepartmental Advisory Committee

Dr. J.C. St.Pierre	DG, Central Experimental Farm, Agriculture Canada
Ms. C. McCarthy	Human Resources Planning Officer, Research Branch, Agriculture Canada
Dr. R. Breithaupt	DG, Communications Research Center, Communications Technologies Research Branch, Department of Communications
Ms. D. Bertrand	Personnel Advisor, Department of Communications
Dr. K. Babcock	ADM, Geological Survey of Canada, Energy, Mines and Resources
Ms. P. Benson	Personnel Advisor, Energy Mines and Resources
Dr. A. Chisholm	Science Advisor, Environment Canada
Mr. R. Ross	Chief, Classification Administration Program Services, Environment Canada
Dr. G. Holland	DG, Physical and Chemical Sciences, Science Branch, Fisheries and Oceans
Ms. G. Danis	Personnel Advisor, Personnel Branch, Fisheries and Oceans
Dr. L. Carlson	Director, Forest Health, Policy Branch, Forestry Canada
Ms. S. Sudnikowicz	Advisor, Human Resources Planning, Personnel Directorate, Forestry Canada
Dr. S. Gunner	DG, Food Directorate, Health Protection Branch, Health and Welfare Canada
Mrs. T. Theriault	Chief, Administration, Food Directorate, Health Protection Branch, Health and Welfare
Dr. C. Willis	V.P. Science, National Research Council
Mr. P. Gendron	Sr. Analyst, Federal Research Directorate, Science and Technology Strategy Branch, Industry, Science and Technology

INTERDEPARTMENTAL ADVISORY COMMITTEE
FOR THE PROMOTION OF RESEARCH SCIENTISTS

TERMS OF REFERENCE

A. BACKGROUND

The Terms of Reference of the Interdepartmental Advisory Committee for the Scientific Research Group (IAC) ensue from the following:

- (1) exchange of correspondence:
 - (a) 21 June 1974 to Messrs. J.J. Carson (PSC) and J.P. Connell (TBS) from J.D. Keys, Chm. (IAC);
 - (b) 27 June 1974 to J.D. Keys from J.J. Carson; and
 - (c) 17 July 1974 to J. D. Keys from J. P. Connell.
- (2) An April 1979 review by the IAC to reflect the negotiated changes, from a performance to a lock step pay plan.
- (3) A 1990 review of these Terms of Reference by the IAC, to reflect changes in the management of the Public Service, under the regime of Increased Ministerial Authority and Accountability, and Public Service 2000.

B. TERMS OF REFERENCE

In light of this last review, the members of the IAC recommend that the Terms of Reference of this Committee be specified as follows:

AUTHORITIES

These Terms of Reference do not in any way affect the authority delegated to departments by the Public Service Commission to make appointments to positions classified under the Research Scientist Sub-Group, or to approve promotions at the time of the annual promotion exercise.

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The IAC has the authority to:

- (a) determine the method(s) of self-regulation that will be used for the promotion of Research Scientists so that the community as a whole adheres to the principle of merit for appointments and promotions.
- (b) In the case of small agencies or departments (defined as having fewer than 25 research scientists), review all appointments to levels 3 and 4 as well as promotions within the sub-group, and make recommendations to that department or agency as to the disposition of the recommendation for promotion or appointment.
- (c) Review all recommendations for promotion to levels 3 and 4 which exceed departmental quotas, and advise if they meet the criteria for promotion. When submitting a case(s), departments will submit the weakest case(s) considered.
- (d) Provide policy advice to Treasury Board, the Public Service Commission and member departments relating to the promotion process for research scientists

MEMBERSHIP

The IAC will be composed of a chairman from a scientific agency which is not one of the employing departments. It will have as members one senior management representative from each of the major employing departments and, a representative from the Treasury Board Secretariat, the Public Service Commission and the Department of Industry, Science and Technology (Science Sector). Departmental representatives may be accompanied by a representative from their department's Human Resources Sector.

Several departments are not represented on the IAC as they employ only small numbers of Research Scientists. A small employer should provide a representative to the annual IAC promotion meeting to support any recommendation.

QUOTAS

Quotas for the group are set at 5% and 25% of the established person-year complement for Research Scientist Group positions, for the SE-RES 4 and SE-RES 3 levels respectively. Departments will not include in these quotas:

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- (a) persons returning to the Research Scientist Sub-Group from a position in the Management Category; or,
- (b) persons who have reached age 65.

In calculating their quotas, departments will include all research scientists on full, part-time, or term employment. Part-time or term staff will be counted against the quota on a pro-rated basis according to the percentage of the person-year they will use.

ANNUAL MEETINGS

The IAC will hold at least one annual meeting at which it will review:

- (a) All recommended promotions above departmental quotas, with regard to productivity and other achievements required for promotion by the classification standard, and recommend appropriate action to the department. Appropriate supporting documentation will be presented to the IAC as outlined in the IAC Guide for the Preparation of Promotion Documentation.
- (b) Any recommendation for promotion to the SE-RES 3 or 4 level submitted by a department or agency with a small research scientist population, and recommend appropriate action to the department or agency.
- (c) Statistics on appointments or promotions, by level, department and whether from inside or outside the public service. Statistics to be submitted for review by departments are outlined in Annex 1 attached.

OTHER REVIEWS

The IAC will at the Annual Meeting or at a time deemed more appropriate:

- (a) Review the consistency of the processes within each employing department for the delegated appointed authority in respect of the Research Scientist Group.
- (b) Review and approve an annual reports on the results of the Annual Periodic Review, for distribution to all departments that employ members of the Research Scientist Sub-Group, and to the Treasury Board Secretariat, to the Public Service Commission, and to

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Industry Science and Technology Canada.

- (c) Assist the departmental IAC member or the Public Service Commission, when requested by the departmental or agency Member, in the review of an appointment to level 3 or 4 from outside the public service. (Related to this is approval of Phd equivalency for new appointments to the Research Scientist Sub-Group. Such approvals are made within the employing department with the advice and participation of the IAC member.)

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Interdepartmental Advisory Committee
for the Scientific Research Group (IAC)

Department:
Year Ending:

STATISTICAL REPORT

RES-1

1. Number approved for promotion from salary maximum by departmental committee by years spent in RES-1.

1 year		2 years	
3 years		4 years	
5 years		6 years	
7 years		8-10	
11 & over			

TOTAL

2. Number recommended for promotion, not at salary maximum of RES-1, by years spent in RES-1.

1 year		2 years	
3 years		4 years	
5 years		6 years	
7 years		8-10	

TOTAL

3. Number approved for promotion from salary maximum plus number recommended for promotion, not at salary maximum of RES-1, by years from PhD.

1 year		2 years	
3 years		4 years	
5 years		6 years	
7 years		8-10	
11 & over			

TOTAL

4. Number of salary increments denied for the year

